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Assessment of the Intercorrelations Among
Process and Performance Indicators--

Managers' Versus Subordinates' Theories
of Organizational Dynamics
by

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September 1977

WP#955-77

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BACKGROUND

Introduction

As part of a larger research project designed to assess the effects and dynamics of a large-scale organizational change effort, the study reported here represents an empirical assessment of the nature of the following relationships: (1) subordinates' perceptions of the interrelationships among unit process variables; (2) managers' perceptions of the interrelationships among the same process dimensions; (3) interrelationships among unit performance indicators; (4) interrelationships among the subordinates' perceptions of unit process dynamics and unit performance, and (5) interrelationships among the managers' perception of the same unit process dynamics and unit performance. The intent was to examine the nature of the subordinates' views of those relationships as compared with the views of their managers. In essence, a comparative analysis of subordinates' versus managers' views of unit dynamics was the focus of the research. An examination of the patterns of interrelationships among variables and the relationship of process variables and unit performance were planned with the hope of specifying which view had the most significant relationship between unit dynamics and unit outcomes, e.g., satisfaction and performance.

Research Setting

As previously noted, this study was part of a larger project which is a large-scale longitudinal study of a multi-divisional corporation engaged in a variety of food service operations throughout the U.S. One division of the firm specializes in the operation of food service

facilities on a contract basis at college-level educational institutions. As a research site, this division offered several advantages which overcame several potential methodological problems and which increased the comparability of units while reducing undesired sources of variation.

These are:

1. A large number of discrete organizational units -- Each school unit operates as a self-contained profit center linked to the divisional home office by accounting control systems. (These profit centers are called Food Service Units).
2. Geographic dispersion of units -- Units are located throughout the U.S. such that local and regional effects are attenuated or can be accounted for.
3. Special proximity of internal elements of a unit -- Personnel work in one central location bounded by the physical plant.
4. Standardized operations -- Tasks, technologies and procedures are common across units.
5. Identical unit organizational structure -- Each unit is headed by a manager with employees grouped functionally under supervisors.

The subject division has been participating in an OD project for the last five years. Activities have previously involved only the management in the division. However, change efforts with the first line food service units described above were planned to start. The larger study was designed to use those change activities as the "treatment condition" in a field experiment.

The experimental treatment is composed of a series of three team-

building sessions conducted with a large sample of food service units. These sessions were conducted over a period of a year-and-a-half by trainers from the in-house OD staff. The entire unit, including the manager, participated as a group or team. A sample of sixty-nine units were designated as experimental groups receiving the treatment, with forty-seven units selected as controls. Each unit has an average of approximately twenty employees. Both experimentals and controls will be instrumented using the research design shown in Figure 1.

FIGURE 1 PLACED ABOUT HERE

Research Instruments and Focal Variables [Larger Study]¹

Established instruments of known validity and reliability were utilized where possible. Use of standard instruments having a record of published empirical results were felt to facilitate comparison with previous studies in building a cumulative knowledge base and allows replication in future research. Permission to use the following instruments was granted by the copyright holders:

- A. Survey of Organization (modified), James C. Taylor and David G. Bowers, Center for Research on Utilization of

¹ A summary of research variables, instruments used and level of administration is given in Appendix A.

FIGURE 1.
Overall Research Design and
Measurement Sequence

	1-1/2 years										1 year
Research Phase	I			II			III			IV	
Experimental Units	O_0	X_a	O_1	O_2	O_3	X_b	O_4	O_5	X_c	O_6	O_7
Control Units	O_0			O_2	O_3					O_6	O_7

Questionnaires were administered seven (7) times during the project and are represent above by the $O_0, O_1, \dots O_7$. The three (3) team building interventions are represented by the X_a, X_b, X_c .

Performance Data were also collected monthly for a period beginning five (5) months prior to the start of Phase I through the end of Phase IV.

In the text of the discussion which follows, the following notations will be used:

t_n , will refer to the questionnaire measurements (O_n), where
 $n = 0, 1, 2 \dots, 7$.

t_{pn} , will refer to the monthly performance measurements, where
 $n = 1, 2, 3, \dots n$. Note, t_{p1} through t_{p5} represent
performance measures prior to O_0 .

Scientific Knowledge, Institute for Social Research,
The University of Michigan (Ann Arbor: 1970).

- B. Leadership Orientation Questionnaire, Edwin A. Fleishman,
Science Research Associates, Inc. (Chicago: 1969).
- C. Personal Orientation Inventory, Everett L. Shostrom,
Educational and Industrial Testing Service (San Diego:
1963).

Instruments suitable for collecting other desired data were not available, necessitating development of additional questionnaires for the following purposes:

- A. To allow standardized format for units to report productivity data.
- B. To survey a sample of customers of each unit.
- C. To collect reports from the in-house trainers relating to the conduct of the team building treatment for each experimental unit.
- D. To determine management attitudes toward OD, expectations before treatment, and perceptions of subsequent outcomes.

The above outlines the setting and methodology for the larger research project. They were presented to give background and place the study presented here in the larger research context. The rest of this paper will solely focus on an examination of the subordinates' and managers' views of organizational dynamics.

One final point should be highlighted before moving on. As stated, the data in this study involve both the unit employees' and the unit managers' perceptions of unit process dynamics and outcomes. For the employees, questions were worded so as to gain the unit employees' view of the current internal dynamics of the unit. The unit managers' questions were worded in such a way as to gain the manager's view of those same dynamics. For example, employees were asked the following question concerning "peer leadership": "to what degree are persons in your unit willing to listen to your problems?" The manager was asked to respond to the following question: "to what degree are persons in your unit willing to listen to each other's problems?" In this way, all questions were worded such that the unit employees' aggregated responses to questions are comparable to the unit manager's responses.

THE STUDY

Utilizing the data collected at t_0 , a cross-sectional correlation analysis was performed in an effort to determine the interrelationships both among and between process variables and outcome variables (satisfaction and performance). As the objective was to determine interrelationship across groups generally, both control and experimental group samples were combined to perform the analysis.

In examining the "interrelationships," five (5) separate correlational analyses were performed. They were as follows:

- (1) the intercorrelations among unit employee process variables, (unit staff questionnaire, t_0);
- (2) the intercorrelations among manager process variables, (manager questionnaire, t_0);
- (3) the intercorrelations among unit performance variables, (mean for unit performance monthly reports, t_{p1} to t_{p5}).
- (4) the correlations between unit employees process variables and unit performance variables, (unit staff questionnaire, t_0 and mean for unit performance monthly reports, t_{p1} to t_{p5});
- (5) the correlations between manager process variables and unit performance variables (manager questionnaire, t_0 and mean for unit performance monthly reports, t_{p1} to t_{p5}).

Data Aggregation

Data from both unit staff and unit manager questionnaires were aggregated into eight (8) scales or indices and the unit performance monthly reports for the five months prior to questionnaire to administration were aggregated. This is for the aggregations is

described below.

1. Process Variables: For both unit staff and manager process variables the same eight (8) indices were constructed based primarily on the Taylor and Bowers (1972) Survey of Organizations. subscale and scale constructions. The eight indices used in the analysis were:²

- a. Group Process: This scale included six (6) questions and was concerned with specifying the nature of processes and functioning of the work group as a group. (Unit Staff: 68-72; Manager, 65-69)
- b. Work Group Effectiveness: This scale was made up of responses to two (2) questions, one dealing with the effectiveness of one's work group (section) and the other asking about the effectiveness of the organization (unit) as a whole. The manager was asked to rate the unit on effectiveness. (Unit Staff: 77, 78; Manager: 74)
- c. Job Satisfaction: This scale is based on responses to six (6) questions and includes satisfaction evaluations on the following dimensions: peer relationships, supervisory relationships, the job itself, and past and future pro advancement opportunities. In essence, it is a measure of overall satisfaction with working in this organization. (Unit Staff: 79-84; Manager: 75, 78, 80, 82, 83)
- d. Job Attractiveness: This scale was a two (2) question scale. The two questions attempted to get an indication of the extent to which the employee enjoyed doing the day-to-day activities which made up his/her job and the extent to which the employee looked forward to coming to work each day. (Unit Staff: 73, 74; Manager: 70, 71)
- e. Commitment: This scale was also a two (2) question scale made of questions which asked to what extent does the employee feel a responsibility to help the unit be successful and to what extent does the employee feel loyal towards the unit. (Unit Staff: 75, 76; Manager: 72, 73)
- f. Supervisory Leadership: This scale was made up of four (4) subscales (support, work facilitation, goal emphasis, and interaction facilitation) and included

² The numbers in parentheses under each scale description refer to the questionnaire items making up that scale for both unit staff and managers. Copies of questionnaires may be obtained from author upon request.

nine (9) questions. It is essentially concerned with specifying the nature of supervisor-subordinate relationships. (Unit Staff: 23, 25, 27, 31, 33, 35, 37, 39, 41; Manager: 21, 23, 25, 29, 31, 33, 37, 39)

- g. Peer Leadership: This scale, also made up of four (4) subscales (with the same labels as those of "supervisory leadership"), included nine (9) questions. It is concerned with specifying the nature of relationships among the unit staff. (Unit Staff: 48, 50, 52, 56, 58, 60, 62, 64, 66; Manager: 45, 47, 49, 53, 55, 57, 59, 61, 63)
- h. Organizational Climate: This scale had five (5) subscales (technological readiness, human resource primacy, communication flow, motivational conditions, and decision-making practices) and included twelve (12) questions. It is primarily a measure of the internal environment of the organization as perceived by and responded to by the organizational members. (Unit Staff: 2, 6, 7, 8, 9, 10, 11, 12, 13, 21, 22; Manager: 1, 2, 6, 7, 8, 9, 10, 11, 12, 19, 20)

2. Unit Performance Variables: As stated, five (5) performance variables were used. Each performance variable score was derived by computing the average for that variable for each unit over the five-month period immediately preceding the administration of the unit employee and manager questionnaires at t_0 . The performance variables employed and how they were computed are as follows:

- a. Gross Profit: Utilizes the monthly "gross profit" figure reported by each unit manager to the corporate headquarters.
- b. Food Costs per Meal Served: This measure is the ratio derived by dividing the monthly unit "food costs" by the number of reported "meals served". Both these figures, "food costs" and "meals served", were reported on the unit performance reporting form sent directly to the researchers.
- c. Meals per Labor Hour: This measure was also a ratio. It was computed by dividing the monthly "meals served" by the total number of "labor hours" utilized during the month.

- d. Labor Costs per Meal Served: Similarly, this indicator was calculated as the ratio of "labor costs" (dollars) to the number of "meals served."
- e. Percent Attendance: This measure is the manager's count or estimate of the number of "board plan" meals actually served as a percentage of the maximum number of "board plan" meals which might be required if all "board plan" members had shown up for all meals.

Sample Size and Statistical Tests Employed

By combining control and experimental groups, the total sample for this analysis was 97 groups.³ That number represents 33 groups from the original control group and 64 groups from the experimental group sample. As the data from the questionnaires were primarily ordinal data, non-parametric statistics were used. The correlation coefficients presented in most of the Tables of this report are both Spearman rank-correlation, r_s and Kendall rank-order correlations, r_t . For purposes of discussion, illustration, and comparison, only the Spearman correlation coefficient will be referred to.

Results of Correlational Analysis

In this section we will simply present the results of the correlational analysis with very little discussion of those results. The following section of this paper will, however, present a framework and discussion of these results in an attempt to provide a conceptual

³ The total sample included 97 groups for which complete data existed for all groups on the process variables. Complete data on the performance indicators existed for 75 groups. Due to the missing data on one or more sets of variables, the sample of groups for which complete data existed on all variables was reduced to 69. Analysis presented utilizes a pairwise deletion method of handling missing data for each coefficient being computed.

integration of these results.

1. Intercorrelation of Unit Staff Process Variables: The results of the analysis to examine the interrelationships among process variables as perceived by unit employees are presented in Table A.

TABLE A PLACED ABOUT HERE

As Table A shows, all the correlations are positive and all are of moderate to strong magnitude. The range of magnitudes goes from a low of .34 for the correlation between "commitment" and "peer leadership" to a high of .89 for the correlation between "peer leadership" and "group process." The median correlation is .54. "Satisfaction" appears to be the most interconnected variable with a median correlation coefficient of .66 across the seven relationships.

2. Intercorrelations of Process Variables as Perceived by Managers: The results of the correlational analysis to determine the interrelationships among process variables as perceived by the unit managers are presented in Table B.

TABLE B PLACED ABOUT HERE

As with the unit employees, all the coefficients for the managers are positive. However, the general magnitude is slightly lower, the median correlation is .48. The range of correlations goes from .38 ("supervisory leadership" and "satisfaction") at the low end to a high

TABLE A

Intercorrelation Matrix for Unit Employees
on Process Variables [N = 97]

	GROUP PROCESS	WORK GROUP EFFECT.	SATISF.	JOB ATTRACT.	COMMIT- MENT	SUPERV. LEADER.	ORGAN. CLIMATE	PEER LEADER.
	(Spearman) r_s							
GROUP PROCESS		.64	.50	.45	.41	.58	.43	.89
WORK GROUP EFFECTIVENESS	.45		.67	.59	.52	.59	.49	.57
SATISFACTION	.35	.49		.71	.54	.66	.68	.43
JOB ATTRACTIVENESS	.33	.42	.51		.74	.54	.55	.42
COMMITMENT	.29	.37	.39	.54		.48	.39	.34
SUPERVISORY LEADERSHIP	.42	.43	.47	.38	.35		.77	.51
ORGANIZATIONAL CLIMATE	.30	.35	.50	.38	.28	.58		.43
PEER LEADERSHIP	.74	.40	.31	.30	.24	.36	.30	
	(Kendall) r_τ							

All coefficients (r_τ and r_s) are significant [p .001]

TABLE B

Intercorrelation Matrix for Unit Managers

on Process Variables [N = 93]

	GROUP PROCESS	WORK GROUP EFFECT.	SATISF.	JOB ATTRACT.	COMMIT- MENT	SUPERV. LEADER.	ORGAN. CLIMATE	PEER LEADER.
	(Spearman) r_s							
GROUP PROCESS		.58	.39	.68	.66	.36	.47	.68
WORK GROUP EFFECTIVENESS	.49		.44	.55	.47	.30*	.38	.55
SATISFACTION	.29	.37		.39	.31*	.28*	.33	.36
JOB ATTRACTIVENESS	.57	.50	.32		.71	.40	.55	.60
COMMITMENT	.55	.41	.25*	.63		.39	.54	.56
SUPERVISORY LEADERSHIP	.26	.23*	.21*	.31	.30		.50	.40
ORGANIZATIONAL CLIMATE	.35	.30	.24*	.42	.42	.35		.48
PEER LEADERSHIP	.52	.44	.26	.48	.44	.28	.34	
	(Kendall) r_t							

* Significant at $.001 < p < .01$

All other coefficients significant at $p < .001$

of .71 ("commitment" and "job attractiveness"). Finally, "group process" is the most intercorrelated variable, as perceived by managers, with a median coefficient of .58 across the seven relationships.

3. Intercorrelations Among Unit Performance Variables: Table C below presents the interrelationships between the five unit performance variables.

TABLE C PLACED ABOUT HERE

Unlike the process variables, the intercorrelations between performance variables are both positive and negative and are not all statistically significant. One observation concerning these data which appears interesting is that "profit" is related to both "meals per labor hour" and "labor cost per meal served" but not related to "food cost per meal served." One explanation might be that the method which managers employ to influence their profit is to manipulate labor either through efficiency demands or through wage policy rather than through food purchasing modification. The latter, food costs is likely perceived to be beyond the manager's control and thus he/she turns to labor, an element perceived to be within the manager's influence. Such a view is supported by the positive correlations between "food costs per meal served" and both "meals per labor hour" and "labor cost per meal served."

TABLE C

Intercorrelation Matrix for Unit Performance Variables

[N = 75]

	GROSS PROFIT	FOOD COST/ MEAL SERVED	MEALS/ LABOR HOUR	LABOR COST/ MEALS SERVED	PERCENT ATTENDANCE	
GROSS PROFIT		-.18	.35**	-.33**	-.27*	
FOOD COST/ MEAL SERVED	-.12		.41*	.53**	-.16	(Spearman r_s)
MEALS/ LABOR HOUR	.25**	.28**		-.48**	.17	
LABOR COST/ MEALS SERVED	-.22**	.38**	-.35**		-.04	
PERCENT ATTENDANCE	-.18*	-.12	.13	-.03		
						(Kendall) r_T

** Significant at $p < .01$

* Significant at $.01 < p < .05$

4. Correlations Between Both Unit Employee and Manager Perceptions of Process Variables and Unit Performance Variables: Tables D and E below present the results of the correlational analysis of the relationships between process and performance variables for unit employees and managers, respectively.

TABLES D and E PLACED ABOUT HERE

As both Tables indicate, there was found to be essentially no relationship between process and performance. As indicated, out of a possible 80 correlations, only 3 were found to be significant at the $p < .05$. On a chance basis we would expect to find 4 significant relationships. Thus, we can conclude there appears to be no systematic linear relationship between process and performance within this sample.

Discussion of Results

The data presented hold many opportunities for discussing organizational and group dynamics. However, in this section we will focus our discussion on one key aspect, the data from the employee and manager questionnaires.

A comparison of the data presented in Tables A and B evidence several noteworthy differences between employees' and managers' perceptions. For example, the analysis shows that for the managers the relationship between "satisfaction" and the other process variables is substantially lower than that reported by the unit employees. The

TABLE D

Correlation Matrix of Unit Employee Process Variables
with Unit Performance Variables [N = 69]

	GROSS PROFIT	FOOD COST/ MEAL SERVED	MEALS/ LABOR HOUR	LABOR COST/ MEAL SERVED	PERCENTAGE ATTENDANCE
GROUP PROCESS	.14	-.14	.06	-.30*	-.14
WORK GROUP EFFECTIVENESS	-.05	-.07	-.07	-.09	-.17
SATISFACTION	-.11	-.00	-.19	-.03	-.17
JOB ATTRACTIVENESS	.07	-.06	-.16	-.13	-.07
COMMITMENT	-.07	-.03	-.21	-.05	-.17
SUPERVISORY LEADERSHIP	-.15	.02	-.08	-.05	.00
ORGANIZATIONAL CLIMATE	-.10	-.02	-.10	-.04	.00
PEER LEADERSHIP	.09	-.08	-.07	-.16	-.14

* Significant at $p < .05$

Note: All correlation coefficients are Spearman
rank correlations (r_s)

TABLE E

Correlation Matrix of Unit Manager Process Variables
with Unit Performance Variables [N = 66]

	GROSS PROFIT	FOOD COST/ MEAL SERVED	MEALS/ LABOR HOUR	LABOR COST/ MEAL SERVED	PERCENTAGE ATTENDANCE
GROUP PROCESS	.17	-.04	.15	-.15	.06
WORK GROUP EFFECTIVENESS	.04	-.11	.08	-.25*	.19
SATISFACTION	.12	.16	-.05	.04	.12
JOB ATTRACTIVENESS	.00	-.05	.08	-.13	.13
COMMITMENT	.28*	.01	.08	-.12	.08
SUPERVISORY LEADERSHIP	-.15	.03	.00	-.14	-.06
ORGANIZATIONAL CLIMATE	-.05	.04	-.06	-.03	.17
PEER LEADERSHIP	-.11	-.06	-.03	-.11	.17

*Significant at $p < .05$

Note: All correlation coefficients are Spearman
rank correlations (r_s)

median correlation between satisfaction and the other process variables is .36 for the managers and .66 for the unit employees. One interpretation of this finding is that managers see employee satisfaction as less connected to unit internal processes and more connected to extrinsic rewards, e.g., pay, benefits, etc. (unmeasured in this study), than do the unit employees themselves. The data suggest the employees feel that unit process dynamics are very much interconnected with their work satisfaction.

Another manager-employee comparison of note is the difference in the interrelationships of "supervisory leadership" and "peer leadership" with the other process variables. A comparison of the data in Tables A and B show that for "supervisory leadership" the intercorrelations between that variable and the other seven process variables has a median of .39 for the managers and .42 for the employees. It is interesting that managers "see" their own behaviors as less related to unit dynamics than do the employees. Put another way, employees perceive manager behaviors to be substantially more important than do the managers themselves. For the "peer leadership" variable the tables are turned. The employees perceive their own behaviors to be less interconnected to the other process variables than do the managers. That is, managers see employee behaviors as much more central to the unit's internal dynamics than do the employees themselves. The median correlation between "peer leadership" and the other process variables is .55 for the managers and .43 for employees.

Thus, the data show that the two sets of actors -- managers and subordinates -- perceive that those areas of organizational life which

are most under their control are less important than those areas in which they do not enjoy control. For the employees, the perception is the managers' behaviors are more central to the internal unit dynamics than are the employees' own behaviors. Likewise, the managers perceive the employees' behavior is more centrally connected to unit dynamics than are their own behaviors.

Before moving on to examine the implications for this finding, one other set of comparisons might prove enlightening. It can be seen in Tables A and B that there is no difference between managers' and employees' view of the centrality of the "work group effectiveness" variable. The median correlations between "effectiveness" and the other process variables is .59 and .47 for the employees and managers, respectively. The interpretation here being that employees and managers see "effectiveness" in a similar fashion and as a function of internal unit dynamics. To delve a little deeper, the managers' data show "effectiveness" is perceived to be more a function of "peer leadership" ($r_s = .55$) than a function of "supervisory leadership" ($r_s = .30$). The employees' data (Table A) shows "effectiveness" is equally related to "supervisory leadership" ($r_s = .59$) and "peer leadership" ($r_s = .57$). Here again, the managers "see" outcomes as less under their influence and rather as more under the employees' influence. The employees' on the one hand partially "support" the view in that their data indicate a strong relationship between peer leadership and effectiveness. However, the employee data also indicate that they view their influence

on effectiveness as about equal to that of the managers.⁴

Implications

The previous discussion of the results presented appears to have some important implications for changing organizational behavior and improving performance. There are also implications for further research required. We will first confront the issue of organizational improvement and then closed with a brief discussion of possible lines of future research.

From the comparative analysis of managers' and employees' perceptions of organizational dynamics, one conclusion, albeit speculative, which might be drawn is that in this organization, managers and their subordinates may be operating from substantially different models or theories of organizational behavior. As has been noted, there appear to be different views of the importance or centrality of one's own role and behavior to "affecting" other organizational dynamics. There were substantial differences evidenced concerning the extent to which subordinates perceive their own behaviors to be related to organizational outcomes versus the extent to which the managers see those same subordinates to influence organizational outcomes. Likewise, differences were noted on the way managers versus subordinates viewed the managers' influence over organizational dynamics and outcomes. In essence, each group saw the other group's behavior as more connected to organizational

⁴ In this section, the discussion has used "causal" language at points. We fully recognize that our data (simple correlations) do not afford us with such a luxury. We would request that either the reader allow us this indiscretion of speculation or feel free to perform the verbal mental translations necessary to make our discussion consistent with our form of data.

dynamics and outcomes than they perceived their behaviors to be connected with those dynamics. The exception was for the employees' view of "work group effectiveness: which they "saw" as equally related to both their own behaviors and the behaviors of their manager.

Back to the issue of different models of organization operating in this situation. It is postulated that the managers may have one model of organization while the employees may be operating from another quite different model. The managers' model can be characterized as one which assumes that the key determinant of organizational performance is the nature of relationships among the subordinates (peer leadership) and the result of subordinate behaviors. Further, the data imply that the managers may hold the belief that their own behavior and relationship with subordinates is relatively unimportant in regard to group effectiveness. In essence, the managers' model assumes group effectiveness is primarily a function of interpersonal relationships among his/her subordinates and that the nature of those relationships are largely independent of the managers' behavior. Further, the managers' model holds that subordinates' "satisfaction" has relatively little relationship with any of the organizational dynamics variables.

The subordinates on the other hand appear to hold an entirely different model. The employees' model can be described as one that assumes that it is the manager's behavior and relationship with them (supervisory leadership) which is a critical determinant of organizational dynamics and outcomes. Like the managers' model, the subordinates' model plays down the relationship between their own behavior (peer leadership) and most other organizational dynamics. Concerning the

relationship between their "satisfaction" and organizational dynamics, the subordinates' model characterized "satisfaction" as being strongly interrelated with the other variables. Finally, the subordinates model assumes that all eight of the "process" variables are substantially interrelated.

There are several interesting implications for the behaviors of each of the groups which flow from this notion of differential models. Unfortunately, the behavioral implications appear to be dysfunctional for both organizational performance and positive organizational change. To facilitate this discussion, Table F presents the median correlation for each variable with the other seven variables. The medians are shown separately for both managers and employees (subordinates).

TABLE F PLACED ABOUT HERE

Given the two models operating simultaneously, certain actions by both parties might be predicted. For the subordinates, efforts aimed at increasing their "satisfaction" would be expected. However, the managers' model holds that "satisfaction" is the least interconnected variable of the eight and thus is unlikely to lend support or seriously respond to such efforts. Rather, the manager will likely attempt to "improve" the peer leadership dimension as according to their model that is one of the most interconnected dimensions. Such efforts are likely to be resisted by the subordinates for as Table F shows, from the subordinates point of view peer leadership is the least central variable. The subordinates efforts, or desires, will

TABLE F

Comparison of Median Correlation Between Focal
Variable and Other Process Variables for Unit
Employees and Unit Managers

<u>Focal Variables</u>	<u>Median Correlation Between Focal Variables and Other Variables^a</u>		<u>P-Value^b</u>
	Employees	Manager	
Group Process	.50	.58	0.089
Work Group Effectiveness	.59	.47	0.125
Satisfaction	.66	.36	0.002
Job Attractiveness	.55	.55	---
Commitment	.48	.54	---
Supervisory Leadership	.58	.39	0.044
Organizational Climate	.49	.48	---
Peer Leadership	.43	.55	0.140

^a All correlation coefficients shown are
Spearman rank correlation (r_s).

^b P-values shown are for two-tailed test
of significance. Blanks indicate $p > 0.20$.

likely be for a positive change in supervisory leadership. However, from the managers' model view, this is an inappropriate target for change.

As can be seen, a sort of "vicious circle" dynamic may result as a consequence of the two competing models in simultaneous operation. Thus, a great deal of energy may be expended by each party in attempting to influence and/or resist the influence of the other party. That is, managers may be attempting to improve relationships among subordinates and be met with resistance in the form of attempts by subordinates to get the manager to take more leadership and/or build better superior-subordinate relationships. The latter will be ignored or resisted by the manager as it does not fit his/her model.

A further negative consequence of such dynamics is that there is a self-reinforcing aspect of the phenomenon given the nature of the two models. When the subordinates attempt to get the manager to focus on the "supervisory leadership" dimension and are unsuccessful, it can have the result of reinforcing the belief that they (peer leadership) have little influence on the organization's dynamics and outcomes and that it is the manager (supervisory leadership) which is critical. Likewise, when the manager's attempts to affect peer leadership fail, the belief may be reinforced that the manager's behavior (supervisory leadership) is unimportant and what is critical is the thing which he/she cannot seem to change, namely peer leadership.

Such a phenomenon may also explain the lack of observed relationship between the performance indicators and the managers' and subordinates' perceptions of organizational process variables (Tables D and E). If it is true that as a consequence of the two conflicting "models" in simultaneous operation, there may be much energy being directed at "changing" the nature of the other's model of process dynamics. Whether these data indicate a reduced attention to performance, or represent biased and inaccurate views of a "real" interconnected process-performance relationship, or are indicative of the actual independence of process and performance dimensions, is unknown and beyond the scope of these data. However, one might postulate that the result of the foci of energy being directed at process changes may result in a reduced explicit attention to performance. If one's theory holds process and performance are interrelated in a specific causal manner, it would not be surprising to expect to find attention focused on these process variables which are believed to most directly affect performance rather than on performance variables specifically. Such a dynamic may be operating in this sample.

An alternative explanation which also seems possible is that there may be an undiscovered reality -- a pattern of interconnectedness between process and performance variables -- of which the interrelationships between the managers' and employees' perceptions and the performance variables represent a distortion. That is to say there may be a pattern of relationship between process and performance which require more objective, "clinical" observation in order to identify the "actual"

process dynamics. A different methodological approach to that employed in this research would be required to test the viability of these two explanations.

One final comment on this issue of process-performance linkage specifically and the discussion included in this paper generally. It is recognized that the discussion of "models" of organizational dynamics is dealing with a macro or organization-wide phenomenon. That is the discussion has utilized data summarative of an organizational level to make inferences concerning "intra-group" phenomena. Whether these inferences represent an "ecological fallacy" resulting from the aggregation process and comparison of those aggregated data is difficult to assess at this point. However, future research and analysis should endeavor to guard against or test for such an occurrence.

Areas and Directions for Future Research

Before concluding, a brief discussion of opportunities for further research into this area seems in order. One important issue this research has raised, an issue vastly overlooked, is the possibility of multiple models of human nature and organizational dynamics operating within the same setting at the same time. The vast majority of our research has implicitly assumed that there is a single model or theory operating in a given setting and the objective of those research efforts have been to discover that theory. Rather it might be the case that there is more than one model of the world operating in a given situation and the goal of research might be to first identify the range and nature

of those models operating. Second, given more than one identifiable model, the focus might be on a comparative examination of the areas of agreement-disagreement, compatibility-incompatibility, and the areas in which they are complimentary versus competitive. Third, study and development of application technologies for facilitating the holders of different "models" to become aware of the nature their own and others' models is needed. An awareness of and examination of the consequences of their differences for their own satisfaction and organizational outcomes may be the first step in developing an effective integration of "the individual and the organization."

Concluding Remarks

In conclusion, first to clarify, what is proposed here is not that exploration and search for general theories of the nature of human nature and organizational dynamics should be redirected. Quite the opposite, it is stressed that such efforts should continue. Rather it is advocated that more effort be expended in examining models of human nature operating at the local level. That is to explore the extent to which local actors hold similar or dissimilar models and to understand the nature and consequences of those multiple models. To use Argyris and Schön's (1974) terms, the discovery and understanding of local "theories-in-action" and/or "espoused theories" may provide the critical dimension required to understand local patterns of organizational behavior and to build a generalized theory of behavior around those aspects of behavior which are generalizable.

APPENDIX A

Summary of Research Variables and Instruments

TABLE A.1

Research Variables and Instruments

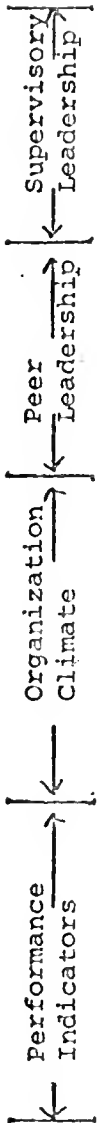
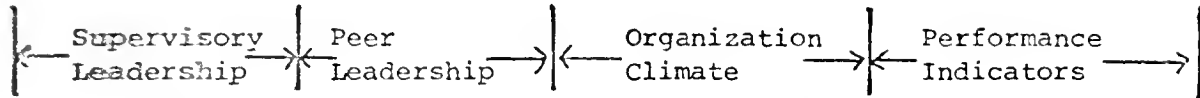
<u>Variables</u>	<u>Instruments</u>	<u>Administered To</u>
A. Internal Structure and Process		
1. Organizational Climate	Survey of Organizations	1. Unit Manager 2. Unit Staff (employees)
a. Human Resources Primacy		
b. Communication Flows		
c. Motivational Conditions		
d. Decision-Making Practices		
e. Technological Readiness		
2. Leadership		
a. Supervisory	Survey of Organizations	1. Unit Manager
b. Peer	Survey of Organizations	2. Unit Staff
1. Work Facilitation		
2. Interaction Facilitation		
3. Supportiveness		
4. Goal Emphasis		
c. Consideration	Leadership Opinion Questionnaire	1. Unit Manager
d. Support		
3. Group Process	Survey of Organizations	1. Unit Manager 2. Unit Staff
B. Output		
1. Performance	Unit Performance Report	1. Food Service Unit
a. Financial: Sales, Costs, Profits		
b. Labor Quality: Promotions, terminations, absenteeism, safety		
c. Efficiency: Labor hours, meals/ students served		
2. Effectiveness	Survey of Organizations	1. Unit Manager 2. Unit Staff
a. Effectiveness		
b. Customer Satisfaction	Customer Survey	1. Sample of Unit Customer
1. With Food		
2. With Service		
3. With Atmosphere		
3. Satisfaction	Survey of Organizations	1. Unit Manager 2. Unit Staff
4. Self Actualization	Personal Orientation Inventory	1. Unit Manager 2. Unit Staff
C. Intervention		
1. Description of Activity	Trainer Report	1. OD Facilitator
2. Evaluation of Activity		
3. Prediction of Impact		

APPENDIX B

Intercorrelation Matrices For Process Subscales, Process Scales, and Performance Variables

EMPLOYEE PERCEPTIONS - CURRENT STATE

SUBSCALE INTERCORRELATIONS [N=97]



	Support-iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	Support-iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	Technological Readiness	Human Resources Primary	Communication Flow	Motivational Condition	Decision Making	Gross Profit	Food Cost/Meal Served	Labor Cost/Meal Served	Meals/Labor Hour	Per Cent (%) Attendance
Support-iveness	1.00																	
Goal Emphasis	.68	1.00																
Work Facilitation	.62	.86	1.00															
Interaction Facilitation	.61	.80	.78	1.00														
Support-iveness	.32	.29	.28	.36	1.00													
Goal Emphasis	.41	.49	.46	.59	.70	1.00												
Work Facilitation	.31	.44	.43	.56	.59	.76	1.00											
Interaction Facilitation	.35	.46	.41	.58	.69	.82	.88	1.00										
Technological Readiness	.26	.43	.43	.43	.05	.21	.31	.42	1.00									
Human Resources Primary	.54	.65	.61	.63	.24	.37	.45	.39	.53	1.00								
Communication Flow	.61	.66	.63	.65	.34	.42	.39	.36	.38	.74	1.00							
Motivational Condition	.49	.60	.56	.52	.33	.38	.36	.45	.26	.49	.55	1.00						
Decision Making	.58	.67	.64	.71	.34	.47	.45	.48	.44	.79	.82	.60	1.00					
Gross Profit	.08	.28	.24	.00	.14	.07	.06	.08	.12	.08	.12	.16	.02	1.00				
Food Cost/Meal Served	.02	.10	.00	.02	-.07	-.13	-.04	-.02	.00	-.00	.03	.03	.01	.01	1.00			
Labor Cost/Meal Served	-.04	-.19	-.14	-.00	.17	.13	.01	-.03	-.17	-.07	-.02	-.14	-.02	-.02	-.02	1.00		
Meals/Labor Hour	-.10	.09	.00	.09	-.20	.23	-.08	.01	.11	-.04	.10	-.04	-.10	-.10	-.10	-.10	1.00	
Per Cent (%) Attendance	.04	.15	.03	.02	.05	.08	.19	.19	.12	.22	.03	.01	.05					1.00

SPEARMAN

(r_s)

KENDALL² (r_t)

¹Spearman Coefficients

$ r_s > .28$	$p < .001$
$.28 \geq r_s > .23$	$p < .01$
$.23 \geq r_s \geq .19$	$p < .05$

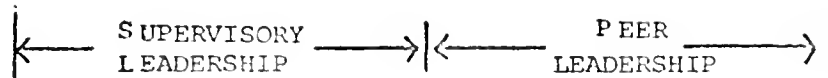
²Kendall Coefficients

$ r_t > .20$	$p < .001$
$.20 \geq r_t > .16$	$p < .01$
$.16 \geq r_t \geq .14$	$p < .05$

SEE
TABLE C

EMPLOYEE PERCEPTIONS - DESIRED STATE

SUBSCALE INTERCORRELATIONS * [N= 97]



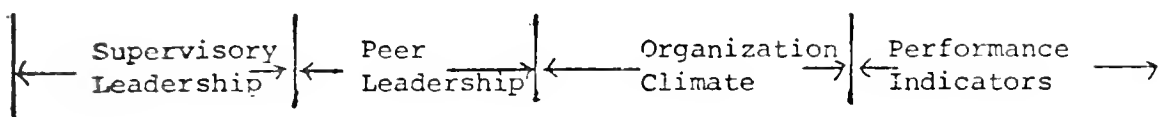
		SUPERVISORY LEADERSHIP				PEER LEADERSHIP				
		Support-iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	Support-iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	
SUPERVISORY LEADERSHIP	Support-iveness		.52	.54	.65	.49	.42	.33	.42	SPEARMAN (r_s)
	Goal Emphasis	.38		.61	.67	.35	.53	.43	.47	
	Work Facilitation	.39	.45		.69	.48	.55	.48	.57	
	Interaction Facilitation	.48	.51	.53		.62	.61	.57	.70	
PEER LEADERSHIP	Support-iveness	.35	.25	.34	.45		.59	.67	.69	
	Goal Emphasis	.30	.41	.40	.46	.44		.68	.72	
	Work Facilitation	.24	.34	.35	.43	.49	.51		.81	
	Interaction Facilitation	.29	.35	.41	.52	.51	.54	.63		

KENDALL (r_t)

*All Correlation Coefficients are significant ($p < .001$)

MANAGER PERCEPTIONS - CURRENT STATE

SUBSCALE INTERCORRELATIONS [N=95]



	Support-iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	Support-iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	Technological Readiness	Human Resources Primary	Communication Flow	Motivational Condition	Decision Making	Gross Profit	Food Cost/Meal Served	Labor Cost/Meal Served	Meals/Labor Hour	Per Cent (%) Attendance
Support-iveness	1	.36	.32	.43	.17	.23	.15	.20	-.08	.12	.35	.08	.22	.07	-.06	-.25	.13	.06
Goal Emphasis	.29	1	.52	.40	.29	.39	.27	.22	.20	.27	.22	.25	.26	-.20	.07	-.11	-.09	-.11
Work Facilitation	.28	.45	1	.35	.06	.17	.20	.08	.13	.20	.31	.17	.25	-.23	.09	-.05	.11	-.13
Interaction Facilitation	.37	.33	.30	1	.32	.25	.44	.45	.09	.23	.22	.29	.38	.01	.05	.10	-.18	.01
Support-iveness	.13	.23	.05	.25	1	.44	.53	.73	.02	.31	.19	.33	.33	-.05	-.12	.06	-.15	.12
Goal Emphasis	.19	.35	.15	.21	.38	1	.39	.48	.07	.34	.27	.20	.28	-.10	-.20	.09	-.11	.18
Work Facilitation	.12	.21	.17	.37	.44	.34	1	.70	.09	.27	.35	.18	.45	-.19	.04	-.18	-.08	.07
Interaction Facilitation	.15	.18	.07	.36	.60	.42	.60	1	.02	.23	.32	.35	.42	.03	-.04	-.01	-.06	.21
Technological Readiness	-.06	.17	.10	.08	.02	.06	.07	.02	1	.20	.11	-.05	.17	-.09	.10	-.04	.10	.15
Human Resources Primary	.10	.29	.17	.18	.26	.29	.22	.17	.16	1	.31	.19	.31	-.09	.05	-.03	-.08	.22
Communication Flow	.29	.35	.28	.19	.16	.23	.29	.25	.09	.26	1	.19	.35	-.18	.05	-.15	.01	-.01
Motivational Condition	.06	.21	.14	.25	.27	.18	.14	.27	-.04	.15	.17	1	.15	.06	-.06	.18	-.01	.13
Decision Making	.18	.21	.26	.30	.25	.23	.36	.32	.14	.24	.28	.12	1	.09	-.09	-.10	-.16	.09
Gross Profit	.06	-.16	-.18	.01	-.02	-.01	-.12	.03	-.06	-.06	-.13	.05	.09	1				
Food Cost/Meal Served	-.05	.04	.08	.03	-.08	-.15	.03	-.03	.09	.03	.04	-.05	-.07		1			
Labor Cost/Meal Served	.10	-.09	-.04	.07	.04	.06	-.13	-.00	-.02	-.02	-.12	.14	-.05			1		
Meals/Labor Hour	-.19	-.06	.09	-.14	-.10	-.09	-.05	-.03	.07	-.07	-.00	.00	-.12				1	
Per Cent (%) Attendance	.05	-.08	-.10	.02	.08	.14	.04	.16	.11	.16	-.01	.10	.06					1

SPEARMAN

(r_s)

SEE
TABLE C

²
KENDALL (r_t)

¹ Spearman Coefficients

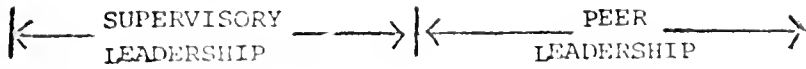
$$\begin{aligned} .29 &\geq |r_s| > .29, & p < .001 \\ .29 &\geq |r_s| > .21, & p < .01 \\ .21 &\geq |r_s| > .17, & p < .05 \end{aligned}$$

² Kendall Coefficients

$$\begin{aligned} .23 &\geq |r_t| > .23, & p < .001 \\ .23 &\geq |r_t| > .20, & p < .01 \\ .20 &\geq |r_t| > .13, & p < .05 \end{aligned}$$

MANAGER PERCEPTIONS - DESIRED STATE

SUBSCALE INTERCORRELATIONS* [N= 95]



	Support- iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation	Support- iveness	Goal Emphasis	Work Facilitation	Interaction Facilitation
Support- iveness		.50	.45	.50	.59	.36	.42	.55
Goal Emphasis	.44		.65	.59	.54	.57	.41	.52
Work Facilitation	.40	.60		.60	.43	.59	.60	.67
Interaction Facilitation	.43	.53	.53		.52	.56	.62	.66
Support- iveness	.49	.46	.37	.44		.55	.51	.59
Goal Emphasis	.33	.54	.55	.52	.50		.60	.68
Work Facilitation	.37	.36	.53	.54	.42	.56		.80
Interaction Facilitation	.47	.45	.54	.58	.50	.63	.71	

SPEARMAN

(r_s)

KENDALL (r_t)

*All Correlation Coefficients are significant ($p < .001$)

References

1. Argyris, C. and D. Schön. Theory in Practice. San Francisco: Jossey-Bass, 1974.
2. Taylor, J.C. and D.G. Bowers. Survey of Organizations. Ann Arbor: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1972.

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